DOCUMENT RESUME

ED 143 945 CG 011 730

AUTHOR Severson, Herbert H.
TITLE The Use of Biofeedback and Relaxation Training by School Psychologists.
PUB DATE 26 Mar 76
NOTE 9p.; Paper presented at the Annual Meeting of the National Association of Student Personnel Administrators (Dallas, Texas, March 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Adjustment (to Environment); *Behavior Problems; *Desensitization; *Elementary School Students; Hyperactivity; Hypertension; School Psychologists; *Self Control; State of the Art Reviews; *Stress Variables; Teacher Role
IDENTIFIERS *Biofeedback Training

ABSTRACT

This paper is a collection of data from several studies about the use of Systematic Relaxation and Biofeedback Training by school psychiatrists to help children develop greater self control and also to alleviate behavioral problems resulting from stress related disorders. In addition, classroom use of both techniques is suggested, explored, and urged. (ST)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

The Use of Biofeedback and Relaxation Training by School Psychologists

Paper presented to National Association of School Psychologists March 26, 1976

Herbert H. Severson, Ph.D.
Director, School Psychology Program
DeBusk Memorial Center
College of Education
University of Oregon
Eugene, Oregon 97403

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Herbert H. Severson

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED143945

There is an increasing interest in teaching children and adults more effective coping strategies with which to deal with stresses in their lives. Most of our ineffective functioning and illness result from stress-related disorders. This stress reaction may exhibit itself in a variety of ways ranging from psychosomatic illnesses such as ulcers, migraine and tension headaches, to less obvious symptoms such as inability to concentrate and general anxiety states. These reactions may have the compounding effect of lowering self-esteem and self-confidence, or interrupting interpersonal relations and decision making.

The most desirable approach to stress reduction would be one which teaches active coping skills designed to deal with anxiety reactions, as well as behaviors designed to alleviate the increase in anxiety. Two approaches which meet these criteria are Systematic Relaxation Training and Biofeedback Training.

Both Systematic Relaxation and Biofeedback Training methods are designed so that a person can learn to exert voluntary self-regulation over most of their mental and emotional reactions and over most physiological processes. Both approaches have major implications for understanding and treating emotional and physical problems. Training in these methods of voluntary self-regulation can serve as a primary tool or treatment in preventative mental health and in enhancing human potential.

Recent studies have shown that both Relaxation and Biofeedback training can be used effectively to deal with problems that are commonly referred to the school psychologist. A study by Braud, Lupin and Braud (1975) indicated that specific

CG011730

electromyographic (EMG) training with a 6½ year old hyperactive boy could not only lower frontalis tension levels, but this training also had a dramatic effect upon ITPA and WISC subtest scores. Another study (Braud & Braud, 1974) indicated that using relaxation tapes with 22 referred children (15 hyperactive, 6 behavior problem, 1 autistic) significantly reduced tension levels. Additionally, Lupin, Braud and Duer in an unpublished study reported that the use of relaxation tapes with hyperactive children and their parents, significantly altered some of the child's rated behaviors. Conley, Besserman and Kirschvink, in another unpublished study, used EMG training sessions on six subjects diagnosed as hyperkinetic and learning-disabled. Pre-and post-measures of the Bender, WISC subtests and Sprague rating scale indicated significant improvement in learning and decreases in inappropriate behavior.

A recent study by Haight, Irvine, and Jampolsky (1976) further attests to the increasing interest in applying biofeedback techniques to working with children diagnosed as hyperactive. The authors trained 4 children to lower their frontalis tension levels using EMG feedback. The training sessions consisted of nine twenty minute feedback sessions over a seven week period with baseline measures taken before and after the training. The study used a variety of reading, achievement, drawing, and intelligence measures as dependent variables. The eighteen dependent measures were compound pre- and post-with a matched control group of 4 hyperactive children. No significant differences were found. The authors cite small sample size and inadequate controls for their negative results. This study would seem to pose questions for the generalizability of lowered EMG levels of the frontalis to achievement on standardized assessment techniques.

Further work with hyperactive children was done by Shouse and Lubar (1976) at the University of Tennessee. They noted a significant correlation between

somatomotor inhibition and conditioned increases in sensorimotor rhythm (SMR). SMR is defined as 12-15 Hz Rolandic activity produced in the absence of high voltage theta (4-7 Hz). Two hyperactive subjects who were trained to increase production of SMR EEG activity, displayed lower levels of undirected behaviors in the classroom. Although this has a great deal of interest for future studies of hyperactive children it should be noted here that the measurement and training of SMR requires elaborate expenses on equipment and training, and is at present of limited value to school psychologists.

Relaxation training appears to be a popular and effective treatment mode for a wide variety of referred problems. Carter and Synolds (1974) administered an audio-taped relaxation program to 32 boys who were in special classes for minimally brain injured children and selected a random group of similiar children for a control group. Relaxation training was administered to the experimental group three days a week for four weeks. The results indicate that 1) the program was effective in enhancing the quality of handwriting, 2) there was transfer to nonexperimental situations, 3) the changes were stable over time, and 4) there was very high interjudge reliability of handwriting quality.

Relaxation training has been frequently used as the counter conditioning response to reduce anxiety reactions. Systematic desensitization (SD) is based upon the premise of finding an effective response to use in the paradigm and relaxation has proved to be the most popular by far. Although systematic relaxation studies are beyond the scope of this presentation there have been some studies which compare relaxation training alone to desensitization. These studies have generally found that relaxation training alone is as effective or more effective in reducing anxiety as is desensitization. (Laxer and Walker, 1970; Laxer, Quarter, Kooman and Walker, 1969; Londas, 1967; Barabasz, 1973; Graziano and Kean, 1968).

The results of these studies underline the potential usefulness of autogenic and relaxation training for the reduction of anxiety in children. These findings should not preclude the use of systematic desensitization but should emphasize that much of the power of the technique may lie with the child learning the relaxation response.

Most instructions available for the teaching of systematic relaxation seem appropriate and effective across populations. Many commercial cassette series are readily available as are written instructions. When working with younger children one might refer to Koepen's (1974) work with the use of relaxation training for children. Braud and Lupin have produced a commercial program of six cassettes designed to teach relaxation exercises to children. Additional instructions and variations are available from many sources. The two books of most recent origin and profound impact in this area are Herbert Bensow's The Relaxation Response and Schultz and Luthe's Autogenic Training. Most of the instructional sets designed to teach relaxation owe much of their development to Jacobsen's 1938 book Progressive Relaxation.

Recent methods in this area have incorporated more imagery and auto-suggestion into the instructional set until they have become a blend of meditation, progressive relaxation and hypnagogic induction exercises. It does not appear to be very critical what type of relaxation instructions are used although one should have alternative instructional sets available since certain individuals or age groups may be more responsive to one than another.

Systematic relaxation has been used in a wide variety of other settings which have some applicability to school age children. Alexander (1972) used relaxation to increase peak expiratory flow rates in asthmatic children. This has important implications for the treatment of children with bronchial asthma and the results

have been replicated by a number of authors. (Davis, Saunders, Creer and Chai, 1973; Kahn, Staerk, and Bonk, 1974; and Alexander, Miklich, and Hershkoff, 1972) Barry Sterman (1972) has also used relaxation training combined with EEG biofeedback to diminish the frequency and severity of seizures in epileptic children. Many other applications can also be found which range from the control of stuttering, diminishing subvocalization to increase reading speed, and neuromuscular rehabilitation of children who have suffered serious traumatic injury.

The use of relaxation may be built right into the curriculum of the school and used daily by the classroom teacher. The author has received numerous reports of teachers that have incorporated relaxation training into their daily regimen. The author has been training teachers to use relaxation training as part of their teaching children adaptive learning responses and has had very positive reactions from elementary level teachers and children. One of the large scale applications of this procedure is taking place under a Title IV grant in the Spearfish, South Dakota School District. Here Loretta Engelhardt has been training 20 teachers to use relaxation training in their classroom and have also used EMG and hand temperature feedback to monitor the degree of relaxation attained. Statistical data is being collected now as they are in the first year of a three year grant. The excitement generated by the first group of teachers trained has generalized throughout the district and the next step is to put relaxation training into the curriculum.

The author has been training teachers to use relaxation training with learning disabled children and has found the approach easy to teach and effective in reducing activity levels in the children. Teachers have responded positively to the approach and audio cassette tapes have simplified and standardized the training. The author has adapted progressive relaxation exercises to be more

appropriate to children and has been testing these procedures this year. Additionally, the author is currently doing a study on the comparison between relaxation training and EMG biofeedback, on effecting learning and observed behavior in children identified as learning disabled.

The attraction of both of these techniques is the ease with which they can be learned and used, and the wide applicability to the children commonly referred to the school psychologist. We are on the verge of the development of both approaches to teach children to more effectively cope with whatever situation might arise that causes them distress. It is far more effective in the long run to train children to handle stress more effectively than it would be to alter the external environment each time the situation becomes a problem.

It is the hope of the author that school psychologists will use relaxation training and biofeedback procedures to help children develop greater self control It is this type of adaptive learning that will help children develop confidence that they can control their bodies, minds and environment. In the final analysis it is only ourselves which we have control over.

References:

Alexander, Barney A. Systematic Relaxation and the flow rates in asthmatic children: relationship to emotional precipitants and anxiety. Journal of Psychosomatic Research, Vol. 16, 1972, p. 405 - 410.

Alexander, B., Miklich, D. & Hershkoff, H. The immediate effects of systematic relaxation training on peak expiratory flow rates in asthmatic children. Psychosomatic Medicine, Vol. 34, No. 5, 1972.

Barabasz, Arreed F. Group desensitization of test anxiety in elementary school. Journal of Psychology, 1973, Vol. 83, 295 - 301.

Benson, Herbert, Beary, John and Mark, Carol. The relaxation response, Psychiatry, 1974, Vol. 37, 37 - 46.

Blanchard, Edward and Young, Larry. Clinical applications of biofeedback training: A review of evidence. Archives of General Psychiatry, 1974, Vol. 30, 573 - 589.

Braud, L. The effects of EMG biofeedback and progressive relaxation upon hyperactivity and its behavioral concomitants. Doctoral dissertation, University of Houston, 1974.

Braud, L.W. and Braud, W.G. Further studies of relaxation as a Psi-conducive state. Journal of American Society Psychical Research, July 1974, in press.

Braud, L., Lupin, M. and Braud, W. The use of electromyographic biofeedback in the control of hyperactivity. Journal of Learning Disabilities, Vol. 8, No. 7, August - September, 1975, P. 420 - 425.

Carter, John and Synolds, Donald. Effects of relaxation training upon handwriting quality. Journal of Learning Disabilities, 1974, Vol. 7, No. 4, Pp. 236 - 240.

Conley, D., Bessarman, R. and Kirschvink. Electromography (EMG) biofeedback on hyperkinetic children. Unpublished mimeo copy, undated.

Davis, M., Saunders, D., Creer, T. and Chai, H. Relaxation training facilitated by biofeedback apparatus as a supplemental treatment in bronchial asthma. Journal of Psychosomatic Research, Vol. 17, 1973, P. 121 - 128.

Engelhardt, Loretta The application of biofeedback techniques within a public school setting. Paper presented to Biofeedback Research Society, March 1976, Colorado Springs, Colorado.

Graziano, A. and Kean, Jeffrey Programmed relaxation and reciprocal inhibition with psychotic children. Behavior Research and Therapy, 1968, Vol. 6, P. 433 - 437.

Haight, M.J., Irvine, A.B. and Jampolsky, G.G. The response of hyperkinesis to EMG biofeedback. Presented at the Seventh annual Biofeedback Research Society meeting March, 1976, Colorado Springs, Colorado.

Kahn, A., Staerk, M. and Bonk, C. Role of counter conditioning in the treatment of asthma. Journal of Psychosomatic Research, Vol. 18, Pp. 89 - 92, 1974.

Kondas, O. Reduction of examination anxiety and stage-fright by group desensitization and relaxation. Behavior Research and Therapy, 1967, Vol. 5, Pp. 275 - 281.

Laxer, R., Quarter, J., Kooman, A. and Walker, K. Systematic desensitization and relaxation of high-test-anxious secondary school students. Journal of Counseling Psychology, 1969, Vol. 16, No. 5, Pp. 446 - 451.

Laxer, R.M. and Walker, K. Counterconditioning versus relaxation in the desensization of test anxiety. Journal of Counseling Psychology, 1970, Vol. 17, No. 5, Pp. 431 - 436.

Little, S. and Jackson, B. The treatment of test anxiety through attentional and relaxation training. Psychotherapy Theory, Research and Practice, Vol. 11, No. 2, Summer 1974.

Long, A. Muscle relaxation training with male adolescents using EMG biofeedback training vs. recorded relaxation instructions. Paper presented at the Midwest Conference of Association of Humanistic Psychology, Chicago, Illinois, May 1974.

Lupin, M. Braud, W. and Duer, W. Effects of relaxation upon hyperactivity using relaxation tapes for children and parents. Unpublished manuscript, February, 1974.

Shouse, Margaret and Lubar, Joel. Management of the hyperkinetic syndrome in children concurrent with sensorimotor rhythm (SMR) biofeedback training. Paper presented at Biofeedback Research Society, March 1976.

Simpson, D.D. and Nelson, A.E. Attention training through breathing control to modify hyperactivity. Journal of Learning Disabilities, 1974, Vol. 7, No. 5, Pp. 274 - 283.